WEST Search History

DATE: Monday, September 29, 2003

Set Name side by side	Query	Hit Count	Set Name result set
	DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=ADJ		
L8	L6 not l5	51	L8
L7	(6115656 or 5761625 or 6259977 or 4604711 or 6199008).uref.	48	L7
L6	4729102[uref]	53	L6
L5	L4 same (fault or fail$5 or problem)	56	L5
L4	L3 with (engine or motor)	580	L4
L3	(airplane or aircraft or flight) with (database or blackbox or recorder or storage) with (stor$3 or record$3 or monitor$3 or track$3)	6853	L3
L2	L1 same (engine or motor)	1452	L2
L1	(airplane or aircraft or flight) same (database or blackbox or recorder or storage) same (stor$3 or record$3 or monitor$3 or track$3)	11313	L1

END OF SEARCH HISTORY

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L5: Entry 37 of 56 File: USPT Mar 1, 1988

US-PAT-NO: 4729102
DOCUMENT-IDENTIFIER: US 4729102 A

TITLE: Aircraft data acquisition and recording system

DATE-ISSUED: March 1, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Miller, Jr.; Lawrence D.	Redmond	WA		
Owen; Robert J.	Mercer Island	WA		
Kiltz; Richard M.	Maple Valley	WA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Sundstrand Data Control, Inc.	Redmond	WA			02

APPL-NO: 06/ 664157 [PALM]
DATE FILED: October 24, 1984

INT-CL: [04] G11B 5/02, G06F 15/74

US-CL-ISSUED: 364/424; 360/5, 369/21
US-CL-CURRENT: 701/14; 360/5, 369/21

FIELD-OF-SEARCH: 364/424, 364/450, 364/451, 364/442, 364/900, 364/431.04, 360/5, 360/31, 369/21, 73/489

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4072850	February 1978	McGlynn	364/424
☐	4188618	February 1980	Weisbart	364/442 X
☐	4258421	March 1981	Jahasz et al.	364/424
☐	4266274	May 1981	Barman	364/431
☐	4267569	May 1981	Baumann et al.	364/431
☐	4271402	June 1981	Kastura et al.	340/52
☐	4325123	April 1982	Graham et al.	364/431.07
☐	4394742	July 1983	Crummer et al.	364/431
☐	4409670	October 1983	Herndon et al.	364/900
☐	4470116	September 1984	Ratchford	364/424

OTHER PUBLICATIONS

"Gathering and Analysing Data on the British Airways Boeing 757 Aircraft.", Waller, Sep. 81, pp. 381-393.
"Solid State Crash Survivable Flight Data Recorders for Mishap Investigation", H. R. Ask, Sep. 81, pp. 33-68, Symposium Aircraft Integrated Data Systems.
"An Intermediate Solution Between Basic and Expanded A.I.D.S.", Robert, Sep. 81, pp. 277-300, Symposium Aircraft Integrated Data Systems.

ART-UNIT: 234

PRIMARY-EXAMINER: Krass; Errol A.

ASSISTANT-EXAMINER: Black; Thomas G.

ATTY-AGENT-FIRM: Christensen, O'Connor, Johnson & Kindness

ABSTRACT:

Disclosed is a combined flight data recorder data aquisition circuitry (10) and airborne integrated data circuitry (12) that can be variously packaged to supplement and update existing aircraft systems or serve as a standalone flight data recording and/or airborne integrated data system. The flight data recorder system circuitry (10) and airborne integrated data system circuitry (12) are separately programmed microprocessor based systems that are capable of processing aircraft parametric signals provided by a variety of aircraft signal sources. In the disclosed arrangement, the airborne integrated data system circuitry (12) is arranged and programmed to automatically monitor engine start and shutdown procedures, aircraft takeoff and cruise and to provide a landing report that indicates fuel consumption and landing weight. To minimize memory storage requirements and provide readily available engine condition information, the automatic monitoring consists of a single set of signals for each monitored condition and the information is converted to standard engineering units. Monitoring of selected parametric signals to detect excessive levels also is provided. Stored data is periodically retrieved by means of a ground readout unit (30).

25 Claims, 8 Drawing figures

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L5: Entry 23 of 56 File: USPT Oct 26, 1999

US-PAT-NO: 5974349
DOCUMENT-IDENTIFIER: US 5974349 A

TITLE: Remote, aircraft, global, paperless maintenance system

DATE-ISSUED: October 26, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Levine; Seymour	Topanga	CA	90290	

APPL-NO: 09/ 205331 [PALM]
DATE FILED: December 4, 1998

PARENT-CASE:
This application is a continuation of application Ser. No. 08/768,313 filed Dec. 17, 1996 and now allowed as U.S. Pat. No. 5,890,079.

INT-CL: [06] G06 F 19/00

US-CL-ISSUED: 701/29; 701/14, 701/35, 340/945
US-CL-CURRENT: 701/29; 340/945, 701/14, 701/35

FIELD-OF-SEARCH: 701/14, 701/29, 701/35, 701/120, 701/301, 340/945, 340/961, 340/963, 340/971, 342/29, 342/36, 342/37, 342/38, 342/454, 342/455, 342/456

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4729102	March 1988	Miller, Jr. et al.	701/14
☐	5153836	October 1992	Fraughton et al.	701/301
☐	5325302	June 1994	Izidon et al.	701/301
☐	5383133	January 1995	Staple	340/963
☐	5463656	October 1995	Polivka et al.	375/200
☐	5467274	November 1995	Vax	701/14
☐	5493309	February 1996	Bjornholt	701/301
☐	5657009	August 1997	Gordon	701/14
☐	5677841	October 1997	Shiomi et al.	701/301
☐	5714948	February 1998	Farmakis et al.	340/961
☐	5740047	April 1998	Pilley et al.	701/301
☐	5890079	March 1999	Levine	701/14

ART-UNIT: 361

PRIMARY-EXAMINER: Chin; Gary

ATTY-AGENT-FIRM: Townsley; Norton R.

ABSTRACT:

This invention is a system that monitors many performance parameters and many aircraft operational parameters, and broadcasts this information along with aircraft identification, audio, video, global positioning and altitude data, to a world wide two-way rf network. This information is monitored and recorded at a remote, centralized location. At this location, this information is combined with archived data, ATC data, weather data, topological data, map data, and manufacturers' data. Analysis of this combined data allows identification of problems and generation of advisories. Six types of advisories are generated: maintenance, safety of flight, flight efficiency, flight separation, safe to fly and safe to take off. In the event of a crash the remotely recorded data provides an instant indication of the cause of the crash as well as where the crashed plane can be found. Use of this invention allows replacement of the current, on-board flight data recorders thus saving costs and weight. Having the recorded data at a remote site eliminates the need to search for flight data recorders. Other advantages are back-up for ATC radar position data, better control of aircraft separation, improved flight efficiency, and allowing use of simpler and lower power radar.

3 Claims, 4 Drawing figures

WEST

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L8: Entry 29 of 51 File: USPT Jul 18, 2000

US-PAT-NO: 6092008
DOCUMENT-IDENTIFIER: US 6092008 A

TITLE: Flight event record system

DATE-ISSUED: July 18, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bateman; Wesley H.	Las Vegas	NV	89030	

APPL-NO: 08/ 873985 [PALM]
DATE FILED: June 13, 1997

INT-CL: [07] G06 F 7/70

US-CL-ISSUED: 701/14; 701/13, 701/35, 342/357.01, 342/455, 244/158R, 244/17.13
US-CL-CURRENT: 701/14; 244/158R, 244/17.13, 342/357.01, 342/455, 701/13, 701/35

FIELD-OF-SEARCH: 701/13, 701/14, 701/35, 701/15, 701/16, 342/357, 342/455, 342/356, 342/357.01, 455/12.1, 455/3.2, 455/5.1, 455/13.1, 455/13.2, 244/158R, 244/75R, 244/17.13

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	3564134	February 1971	Rue	
☐	4510803	April 1985	Perara	73/178R
☐	4660145	April 1987	Hansen	701/14
☐	4729102	March 1988	Miller, Jr. et al.	701/14
☐	4816828	March 1989	Feher	
☐	4825457	April 1989	Lebowitz	
☐	4970648	November 1990	Capots	
☐	5382943	January 1995	Tanaka	
☐	5406324	April 1995	Roth	
☐	5467274	November 1995	Vax	701/14
☐	5493309	February 1996	Bjornholt	342/455
☐	5504491	April 1996	Chapman	
☐	5508736	April 1996	Cooper	
☐	5508922	April 1996	Clavelloux et al.	
☐	5587904	December 1996	Ben-Yair et al.	
☐	5594545	January 1997	Saito et al.	
☐	5798458	August 1998	Monroe	73/587

ART-UNIT: 361

PRIMARY-EXAMINER: Cuchlinski, Jr.; William A.

ASSISTANT-EXAMINER: Arthur; Gertrude

ATTY-AGENT-FIRM: Christie, Parker & Hale, LLP

ABSTRACT:

An in-flight event recording system for acquiring data related to an aircraft, its physical condition and functioning, its altitude, position and speed, direction of travel, and any unusual events. The in-flight event recording system processes and stores the data and is able to continuously transmit the data to ground based receiving and storage installations.

17 Claims, 3 Drawing figures

WEST

Generate Collection | Print

L8: Entry 25 of 51 File: USPT Sep 5, 2000

US-PAT-NO: 6115656
DOCUMENT-IDENTIFIER: US 6115656 A

TITLE: Fault recording and reporting method

DATE-ISSUED: September 5, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sudolsky; Michael D.	Huntington Beach	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
McDonnell Douglas Corporation	Huntington Beach	CA			02

APPL-NO: 09/ 248509 [PALM]
DATE FILED: February 10, 1999

PARENT-CASE:
CROSS REFERENCE TO RELATED APPLICATIONS This application is a continuation-in-part of U.S. application Ser. No. 08/877,219, filed Jun. 17, 1997, now abandoned.

INT-CL: [07] G01 M 17/00

US-CL-ISSUED: 701/35; 701/36, 701/3
US-CL-CURRENT: 701/35; 701/3, 701/36

FIELD-OF-SEARCH: 701/35, 701/36, 701/14, 701/29, 701/3, 340/500, 340/525, 340/507

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4604711	August 1986	Benn et al.	364/900
☐	4635030	January 1987	Rauch	340/52
☐	4729102	March 1988	Miller, Jr. et al.	364/424
☐	4757454	July 1988	Hisatake et al.	364/424
☐	4788531	November 1988	Corwin et al.	340/945
☐	4943919	July 1990	Aslin et al.	701/29
☐	5019980	May 1991	Starr et al.	364/424.04
☐	5023791	June 1991	Herzberg et al.	701/35
☐	5218547	June 1993	Tebbs	364/424.06
☐	5239468	August 1993	Sewersky et al.	364/424.03
☐	5267147	November 1993	Harshaw et al.	364/401
☐	5386363	January 1995	Haak et al.	364/424.01
☐	5442553	August 1995	Parrillo	364/424.04
☐	5459660	October 1995	Berra	364/424.03
☐	5500797	March 1996	Noger	364/424.04
☐	5541863	July 1996	Magor et al.	364/580
☐	5552984	September 1996	Crandall et al.	364/424.03
☐	5581462	December 1996	Rogers	364/424.012
☐	5717595	February 1998	Cherrington et al.	364/467.1
☐	5729452	March 1998	Smith et al.	364/424.03
☐	5758300	May 1998	Abe	701/33

ART-UNIT: 361

PRIMARY-EXAMINER: Cuchlinski, Jr.; William A.

ASSISTANT-EXAMINER: Donnelly; Arthur D.

ATTY-AGENT-FIRM: Harness Dickey & Pierce P.L.C.

ABSTRACT:

A method for recording and reporting fault information pertaining to various components of an aircraft. The method involves recording a diverse plurality of information output from various line replaceable units (LRU's) and other components of the aircraft during takeoff, flight and landing through the use of a bulk storage device, such as an optical quick access recorder (OQAR), on an electronic medium. The electronic medium is then removed from the aircraft after landing and read by an appropriate apparatus. From this information a service technician is able to determine whether or not a fault indication recorded during flight is in fact a legitimate fault requiring the affected LRU to be removed from the aircraft for further diagnostic testing. The method significantly reduces the incidents of no-fault-found diagnostic test results and saves significant man hours which would otherwise be spent testing LRU's and other components which are in fact operating properly. Alternative embodiments of the method disclose making all information from the LRUs available and using multiple overlays to systematically reduce the data to

be recorded when the data proves to be too voluminous to record. The prioritizing of information is also disclosed so that LRU data of lesser importance is eliminated from consideration before more important information. The preferred methods minimize on aircraft data interpretation rendering unnecessary on-board maintenance

processors and technicians for LRU troubleshooting.

13 Claims, 9 Drawing figures

WEST

Generate Collection | Print

L5: Entry 20 of 56 File: USPT Sep 26, 2000

US-PAT-NO: 6125312
DOCUMENT-IDENTIFIER: US 6125312 A

TITLE: Maintenance and warranty control system for aircraft

DATE-ISSUED: September 26, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nguyen; Phuc Luong	Brossard			CA
Goldman; Avrum	Ville St. Laurent			CA
Graham; Peter H.	St. Lambert			CA
McCormick; R. Ian	St. Bruno			CA

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Pratt & Whitney Canada Corp.	Longueuil			CA	03

APPL-NO: 09/ 385362 [PALM]
DATE FILED: August 30, 1999

PARENT-CASE:
CROSS REFERENCE TO RELATED APPLICATION This application is a continuation application based on U.S. application Ser. No. 08/893,672, filed Jul. 11, 1997, now U.S. Pat. No. 6,003,808 issued Dec. 21, 1999 in the name of the same inventors which file should be incorporated herein.

INT-CL: [07] G01 M 17/00, G06 F 19/00, B64 C 5/00, G08 B 19/00

US-CL-ISSUED: 701/35; 701/30, 244/1R, 340/439
US-CL-CURRENT: 701/35; 244/1R, 340/439, 701/30

FIELD-OF-SEARCH: 244/1R, 364/424, 364/424.03, 364/468, 701/29, 701/30, 701/35, 707/103, 707/104, 340/439

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4404641	September 1983	Bozarnik	364/424
☐	4841456	June 1989	Hogan, Jr. et al.	702/119
☐	4943919	July 1990	Aslin et al.	364/424.03
☐	4967337	October 1990	English et al.	700/79
☐	4985857	January 1991	Bajpai et al.	702/184
☐	5018069	May 1991	Pettigrew	701/35
☐	5023791	June 1991	Herzberg et al.	701/35
☐	5081599	January 1992	Saito	702/183
☐	5111402	May 1992	Brooks et al.	701/35
☐	5164912	November 1992	Osborne et al.	713/300
☐	5195173	March 1993	Gordon et al.	706/11
☐	5208745	May 1993	Quentin et al.	700/83
☐	5210704	May 1993	Husseiny	702/34
☐	5214582	May 1993	Gray	701/33
☐	5216612	June 1993	Cornett et al.	364/468
☐	5408412	April 1995	Hogg et al.	
☐	5445347	August 1995	Ng	701/35
☐	5453939	September 1995	Hoffman et al.	364/424.03
☐	5491631	February 1996	Shirane et al.	701/35
☐	5521842	May 1996	Yamada	109/274
☐	5552987	September 1996	Barger et al.	701/14
☐	5579519	November 1996	Pelletier	717/5
☐	5608627	March 1997	Lecomte et al.	701/3
☐	5642284	June 1997	Parupalli et al.	701/30
☐	5778381	July 1998	Sandifer	707/104
☐	5798474	November 1999	Sandifer	707/104
☐	5917408	June 1999	Cardillo et al.	364/424.03

ART-UNIT: 363

PRIMARY-EXAMINER: Carone; Michael J.

ASSISTANT-EXAMINER: French, III; Fredrick T.

ATTY-AGENT-FIRM: Astle; Jeffrey W.

ABSTRACT:

The system provides engine maintenance information automatically from fault code data received from an onboard engine performance monitoring computer. The maintenance information is provided by an HTML repair guide electronically called by the control system using the fault code as part of the page address in the HTML guide. The control system automatically ensures that all fault codes are responded to, i.e. that maintenance personnel carry out the appropriate maintenance actions in response to each and every fault code, with a view to improve quality assurance of maintenance. Maintenance actions of maintenance personnel are automatically for the purposes of validating and/or generating warranty claim applications. The system also has a warranty claim report generator for processing aircraft maintenance

action log data. The generator has a warranty action discriminator for reading the action log data and outputting data representing possible warranty covered actions, and a warranty action validator receiving the possible warranty covered actions data and engine performance data for outputting data representing warranty claim actions. The warranty claim actions data are processed to produce warranty claim report output data.

11 Claims, 3 Drawing figures

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L8: Entry 19 of 51 File: USPT Dec 26, 2000

US-PAT-NO: 6167238
DOCUMENT-IDENTIFIER: US 6167238 A

TITLE: Wireless-based aircraft data communication system with automatic frequency control

DATE-ISSUED: December 26, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wright; Thomas H.	Indialantic	FL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Harris Corporation	Palm Bay	FL			02

APPL-NO: 09/ 340217 [PALM]
DATE FILED: June 25, 1999

INT-CL: [07] H04 B 7/00, G08 B 21/00

US-CL-ISSUED: 455/66; 455/67.1, 455/431, 701/14, 701/29, 701/35, 340/945, 340/825.15, 340/825.72, 375/200, 375/219, 342/36
US-CL-CURRENT: 455/66.1; 340/3.3, 340/825.72, 340/945, 342/36, 375/130, 375/219, 455/431, 455/67.11, 455/67.13, 455/67.16, 701/14, 701/29, 701/35

FIELD-OF-SEARCH: 455/66, 455/73, 455/67.1, 455/431, 340/945, 340/961, 340/971, 340/825.15, 340/825.16, 340/825.69, 340/825.72, 375/200, 375/219, 375/220, 701/3, 701/13, 701/14, 701/29, 701/35, 342/33, 342/34, 342/36

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4642775	February 1987	Cline et al.	701/200
☐	4675675	June 1987	Corwin et al.	340/945
☐	4729102	March 1988	Miller, Jr. et al.	701/14
☐	4872182	October 1989	McRae et al.	375/141
☐	5022024	June 1991	Paneth et al.	370/334
☐	5339330	August 1994	Mallinckrodt	370/325
☐	5359446	October 1994	Johnson et al.	359/143
☐	5459469	October 1995	Schuchman et al.	342/32
☐	5463656	October 1995	Polivka et al.	370/320
☐	5761625	June 1998	Honcik et al.	701/14
☐	5890079	March 1999	Levine	701/14

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 407 179 A1	July 1990	EP	
2 276 066	September 1994	GB	

ART-UNIT: 276

PRIMARY-EXAMINER: Crosland; Donnie L.

ATTY-AGENT-FIRM: Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.

ABSTRACT:

A system and method for providing a retrievable record of the flight performance of an aircraft is disclosed and includes a ground data link unit that obtains flight performance data representative of aircraft flight performance during flight of the aircraft. An archival data store is operative to accumulate and store flight performance data during flight of the aircraft. A spread spectrum transceiver is coupled to the archival data store and includes a transmitter that is operative after the aircraft completes its flight and lands at an airport to download the flight performance data that has been accumulated and stored over one of a plurality of sub-band frequency channels of a spread spectrum communication signal. The frequency is chosen based upon the position of the aircraft determined by an onboard global positioning system. An airport based spread spectrum receiver receives the spread spectrum communication signal from the aircraft and demodulates the signal to obtain the flight performance data.

47 Claims, 20 Drawing figures

WEST

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L8: Entry 18 of 51 File: USPT Dec 26, 2000

US-PAT-NO: 6167239
DOCUMENT-IDENTIFIER: US 6167239 A

TITLE: Wireless spread spectrum ground link-based aircraft data communication system with airborne airline packet communications

DATE-ISSUED: December 26, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wright; Thomas H.	Indialantic	FL		
Salati; Bruce D.	Palm Bay	FL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Harris Corporation	Palm Bay	FL			02

APPL-NO: 09/ 344669 [PALM]
DATE FILED: June 25, 1999

INT-CL: [07] H04 B 7/00, G08 B 21/00

US-CL-ISSUED: 455/66; 455/431, 455/67.1, 701/14, 701/29, 340/945, 340/825.15, 375/200, 375/219
US-CL-CURRENT: 455/66.1; 340/945, 375/130, 375/219, 455/431, 455/67.11, 455/67.13, 455/67.16, 701/14, 701/29

FIELD-OF-SEARCH: 455/66, 455/67.1, 455/431, 455/73, 701/3, 701/13, 701/14, 701/29, 701/35, 340/945, 340/961, 340/971, 340/825.15, 340/825.69, 340/825.72, 340/825.16, 375/200, 375/219, 375/220

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4642775	February 1987	Cline et al.	701/200
☐	4729102	March 1988	Miller, Jr. et al.	701/14
☐	4872182	October 1989	McRae et al.	375/141
☐	5022024	June 1991	Paneth et al.	370/334
☐	5339330	August 1994	Mallinckrodt	370/325
☐	5359446	October 1994	Johnson et al.	359/143
☐	5445347	August 1995	Ng	246/169R
☐	5459469	October 1995	Schuchman et al.	342/32
☐	5463656	October 1995	Polivka et al.	370/320
☐	5761625	June 1998	Honcik et al.	701/14
☐	6092008	July 2000	Bateman	701/14

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 407 179 A1	July 1990	EP	
2 276 066	September 1994	GB	

ART-UNIT: 276

PRIMARY-EXAMINER: Crosland; Donnie L.

ATTY-AGENT-FIRM: Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.

ABSTRACT:

An airline packet network transfers flight data files among respective airborne aircraft in flight. The network includes a plurality of aircraft each having a ground data link unit that includes a data store to accumulate and store flight data files and flight performance data related to flight performance of the respective aircraft in flight. The data store includes a buffer for storing flight data files that have been uploaded to the aircraft of another airborne aircraft for ready transferring flight to another aircraft and an archival data store for storing flight performance data. A spread spectrum transceiver has a receiver and transmitted coupled to the data store that is operative to transmit flight performance data when the aircraft is on the ground and transmit and receive flight data files when the aircraft is airborne when the airborne aircraft are within close proximity to each other.

32 Claims, 20 Drawing figures

WEST

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L8: Entry 17 of 51 File: USPT Jan 9, 2001

US-PAT-NO: 6173159
DOCUMENT-IDENTIFIER: US 6173159 B1

TITLE: Wireless spread spectrum ground link-based aircraft data communication system for updating flight management files

DATE-ISSUED: January 9, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wright; Thomas H.	Indialantic	FL		
Delpak; Ramzi	Melbourne	FL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Harris Corporation	Palm Bay	FL			02

APPL-NO: 09/ 344902 [PALM]
DATE FILED: June 25, 1999

INT-CL: [07] H04 B 7/00, G08 B 21/00

US-CL-ISSUED: 455/66; 455/67.1, 455/431, 701/14, 701/29, 701/35, 340/945, 340/825.15, 340/825.72, 375/200, 375/219, 342/36
US-CL-CURRENT: 455/66.1; 340/3.5, 340/825.72, 340/945, 342/36, 375/130, 375/219, 455/431, 455/67.11, 455/67.13, 455/67.16, 701/14, 701/29, 701/35

FIELD-OF-SEARCH: 455/66, 455/67.1, 455/73, 455/431, 701/3, 701/13, 701/14, 701/29, 701/35, 340/945, 340/961, 340/971, 340/825.69, 340/825.72, 340/825.15, 340/825.16, 375/200, 375/219, 375/220, 342/33, 342/34, 342/36

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4642775	February 1987	Cline et al.	701/200
☐	4729102	March 1988	Miller, Jr. et al.	701/14
☐	4788531	November 1988	Corwin et al.	340/945
☐	4872182	October 1989	McRae et al.	375/141
☐	5022024	June 1991	Paneth et al.	370/334
☐	5339330	August 1994	Mallinckrodt	370/325
☐	5359446	October 1994	Johnson et al.	359/143
☐	5459469	October 1995	Schuchman et al.	342/32
☐	5463656	October 1995	Polivka et al.	370/320
☐	5761625	June 1998	Honcik et al.	701/14
☐	5890079	March 1999	Levine	701/14

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 407 179 A1	July 1990	EP	
2 276 066	September 1994	GB	

ART-UNIT: 276

PRIMARY-EXAMINER: Crosland; Donnie L.

ATTY-AGENT-FIRM: Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.

ABSTRACT:

A system and method updates flight management files in accordance with the present invention and provides a retrievable record of the flight performance of an aircraft. A flight management computer is positioned on board the aircraft and interfaces and provides flight critical data received from flight navigation database files to a plurality of aircraft navigation and operational components located throughout the aircraft. A ground data link unit includes a data store that accumulates and stores flight performance data. A spread spectrum transceiver coupled to the data store transmits the stored flight performance data and uploads navigation database files over a spread spectrum communication signal. A controller is operatively connected to the data store, spread spectrum transceiver and flight management computer and receives the uploaded flight navigation database files and transfers the database files to a flight management computer. The airport based spread spectrum transceiver includes a receiver that receives the spread spectrum signal from the aircraft and demodulates the signal to obtain flight performance data. A transmitter transmits flight navigation database files to the aircraft over a second spread spectrum communication signal based on a unique tail number identifier.

32 Claims, 20 Drawing figures

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L8: Entry 16 of 51 File: USPT Jan 30, 2001

US-PAT-NO: 6181990
DOCUMENT-IDENTIFIER: US 6181990 B1

TITLE: Aircraft flight data acquisition and transmission system

DATE-ISSUED: January 30, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Grabowsky; John Francis	Camarillo	CA		
Stevens; David Ray	Simi Valley	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Teledyne Technologies, Inc.	Los Angeles	CA			02

APPL-NO: 09/ 126156 [PALM]
DATE FILED: July 30, 1998

INT-CL: [07] H04 B 7/00, G06 F 17/40, G06 F 13/00

US-CL-ISSUED: 701/14; 701/35, 455/431
US-CL-CURRENT: 701/14; 455/431, 701/35

FIELD-OF-SEARCH: 701/14, 701/3, 701/24, 701/35, 455/431, 455/422, 455/456

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	Re35590	August 1997	Bezos et al.	
☐	4729102	March 1988	Miller, Jr. et al.	
☐	4804937	February 1989	Barbiaux et al.	340/459
☐	4926331	May 1990	Windle et al.	
☐	4939652	July 1990	Steiner	701/35
☐	5124915	June 1992	Krenzel	702/5
☐	5185700	February 1993	Bezos et al.	
☐	5283767	February 1994	McCoy	367/4
☐	5400018	March 1995	Scholl et al.	
☐	5440544	August 1995	Zinser, Jr.	370/319
☐	5519663	May 1996	Harper, Jr. et al.	365/229
☐	5524272	June 1996	Podowski et al.	455/3.2
☐	5550738	August 1996	Bailey et al.	
☐	5680328	October 1997	Skorupski et al.	
☐	5714948	February 1998	Farmakis et al.	340/961
☐	5793813	August 1998	Cleave	375/259
☐	5826195	October 1998	Westerlage et al.	455/456
☐	5844473	December 1998	Kaman	340/439
☐	5852825	December 1998	Winslow	707/6
☐	5890079	March 1999	Levine	701/14
☐	5901142	May 1999	Averbuch et al.	370/329
☐	5919239	July 1999	Fraker et al.	701/35
☐	5926759	July 1999	Severwright	455/431
☐	6047165	April 2000	Wright et al.	455/66

ART-UNIT: 361

PRIMARY-EXAMINER: Cuchlinski, Jr.; William A.

ASSISTANT-EXAMINER: Gibson; Eric M

ATTY-AGENT-FIRM: Kirkpatrick & Lockhart LLP

ABSTRACT:

An aircraft data transmission system used with an aircraft having a data acquisition unit. The system includes a communications unit located in the aircraft and in communication with the data acquisition unit. The system also includes a cellular infrastructure in communication with the data communications unit after the aircraft has landed. The system further includes a data reception unit in communication with the cellular infrastructure.

33 Claims, 11 Drawing figures

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L8: Entry 14 of 51 File: USPT Sep 25, 2001

US-PAT-NO: 6295488
DOCUMENT-IDENTIFIER: US 6295488 B1

TITLE: Method and device for locating faults and malfunctions in a complex system

DATE-ISSUED: September 25, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Longere; Jean-Yves	Gardanne			FR

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Eurocopter	Cedex			FR	03

APPL-NO: 09/ 099187 [PALM]
DATE FILED: June 18, 1998

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
FR	97 07768	June 23, 1997

INT-CL: [07] G06 F 17/40

US-CL-ISSUED: 701/29; 701/31, 701/34, 701/35
US-CL-CURRENT: 701/29; 701/31, 701/34, 701/35

FIELD-OF-SEARCH: 701/35, 701/31, 701/34, 701/33, 701/29, 701/115

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4409670	October 1983	Herndon et al.	701/14
☐	4644494	February 1987	Muller	364/900
☐	4646241	February 1987	Ratchford et al.	701/14
☐	4729102	March 1988	Miller, Jr. et al.	364/424
☐	4788531	November 1988	Corwin et al.	340/945
☐	5056056	October 1991	Gustin	364/900
☐	5500797	March 1996	Noger	701/35
☐	5671141	September 1997	Smith et al.	
☐	5890079	March 1999	Levine	701/14
☐	5948026	September 1999	Beemer, II et al.	701/35
☐	5974349	October 1999	Levine	701/29

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 069 690 A	January 1983	EP	3/10
0 543 698 A	May 1993	FR	

OTHER PUBLICATIONS

IEEE 1990 National Aerospace and Electronics Conference NAECON 1990, May 21-25, 1990, vol. 3, pp. 1354-1357.
French Search Report dated Feb. 17, 1998, 3 pages.

ART-UNIT: 361

PRIMARY-EXAMINER: Nguyen; Tan

ASSISTANT-EXAMINER: Marc-Coleman; Marthe Y.

ATTY-AGENT-FIRM: Marshall, Gerstein & Borun

ABSTRACT:

An apparatus and method of locating faults in a complex system for an aircraft which monitors operation of the system to detect a malfunction, transmits a malfunction signal when a malfunction is detected, continuously records information about the system in a first memory, clears the recorded information after a given storage period, stores at least some of the information stored in the first memory in a second memory together with information about changes to the values of at least some of the parameters during a particular period after transmission of the malfunction signal, and determines the location of each fault giving rise to a malfunction signal from the information stored in the second memory.

13 Claims, 1 Drawing figures

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Generate Collection | Print

L8: Entry 11 of 51 File: USPT Mar 5, 2002

US-PAT-NO: 6353734
DOCUMENT-IDENTIFIER: US 6353734 B1

TITLE: Wireless spread spectrum ground link-based aircraft data communication system for engine event reporting

DATE-ISSUED: March 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wright; Thomas H.	Indialantic	FL		
Ziarno; James J.	Malabar	FL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Harris Corporation	Melbourne	FL			02

APPL-NO: 09/ 711436 [PALM]
DATE FILED: November 13, 2000

PARENT-CASE:
This application is a continuation of Ser. No. 09/344,5224 filed on Jun. 25, 1999, U.S. Pat. No. 6,143,179, the disclosure of which is hereby incorporated by reference in its entirety.

INT-CL: [07] H04 B 7/00, G08 B 21/00

US-CL-ISSUED: 455/98; 455/431, 455/66, 701/14, 701/35, 340/945, 340/825.72, 375/130, 370/316, 342/33
US-CL-CURRENT: 455/98; 340/825.72, 340/945, 342/33, 370/316, 375/130, 455/431, 455/66.1, 701/14, 701/35

FIELD-OF-SEARCH: 455/66, 455/67.1, 455/54.1, 455/98, 455/33.1, 455/431, 701/14, 701/35, 340/961, 340/971, 340/539, 340/945, 340/825.69, 340/725.72, 340/3.43, 375/130, 370/310, 370/316, 342/33, 342/36

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4642775	February 1987	Cline et al.	701/200
☐	4729102	March 1988	Miller, Jr. et al.	701/14
☐	4872182	October 1989	McRae et al.	375/141
☐	5022024	June 1991	Paneth et al.	370/334
☐	5339330	August 1994	Mallinckrodt	370/320
☐	5359446	October 1994	Johnson et al.	359/172
☐	5459469	October 1995	Schuchman et al.	342/37
☐	5463656	October 1995	Polivka et al.	375/130
☐	6148179	November 2000	Wright et al.	455/66

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 407 179	July 1990	EP	
2 276 066	September 1994	GB	

ART-UNIT: 2632

PRIMARY-EXAMINER: Crosland; Donnie L.

ATTY-AGENT-FIRM: Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.

ABSTRACT:

The system and method of the present invention provides a record of the performance of an aircraft engine. A plurality of sensors sense engine conditions and generate engine data. A ground data link unit is positioned within the aircraft and receives the engine data. A wideband spread spectrum transmitter that can be part of a transceiver downloads the engine data to a ground based spread spectrum receiver that can be part of a transceiver, and receives the wideband spread spectrum communication signal from the aircraft. It demodulates the wideband spread spectrum communication signal to obtain the engine data.

23 Claims, 20 Drawing figures

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L8: Entry 9 of 51 File: USPT May 28, 2002

US-PAT-NO: 6397128
DOCUMENT-IDENTIFIER: US 6397128 B1

TITLE: Flight data recorder system

DATE-ISSUED: May 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Todd; John C.	Glendale	AZ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Honeywell International Inc.	Morristown	NJ			02

APPL-NO: 09/ 223592 [PALM]
DATE FILED: December 30, 1998

INT-CL: [07] G11 B 5/02

US-CL-ISSUED: 701/14; 701/35, 340/964, 340/971, 340/945
US-CL-CURRENT: 701/14; 340/945, 340/964, 340/971, 701/35

FIELD-OF-SEARCH: 701/14, 701/1, 701/24, 701/35, 244/1R, 340/964, 340/971, 340/945, 434/47

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4656585	April 1987	Stephenson	701/14
☐	4660145	April 1987	Hansen	701/14
☐	4682292	July 1987	Bue et al.	701/35
☐	4729102	March 1988	Miller, Jr. et al.	701/14
☐	4774514	September 1988	Hildebrandt et al.	340/971
☐	4970648	November 1990	Capots	701/14
☐	5053967	October 1991	Clavelloux et al.	701/14
☐	5500797	March 1996	Noger	701/35
☐	5508922	April 1996	Clavelloux et al.	701/14
☐	5710559	January 1998	Krogmann	340/963
☐	5774818	June 1998	Pages	701/3
☐	5883586	March 1999	Tran et al.	340/945
☐	5890079	March 1999	Levine	701/14
☐	5971318	October 1999	Lustre	244/1R
☐	5974349	October 1999	Levine	701/29
☐	6043756	March 2000	Bateman et al.	340/945
☐	6043758	March 2000	Snyder, Jr. et al.	340/970
☐	6047165	April 2000	Wright et al.	455/66
☐	6115656	September 2000	Sudolsky	701/35
☐	6122575	September 2000	Schmidt et al.	701/29

ART-UNIT: 3661

PRIMARY-EXAMINER: Cuchlinski, Jr.; William A.

ASSISTANT-EXAMINER: Hernandez; Olga

ABSTRACT:

A flight data recording system (50) including a flight data recorder (FDR (12) with an integrated flight data acquisition unit (FDAU) (16). The FDR (12) has first and second interface ports for communicating with one or more external aircraft instrumentation subsystems. The system includes an digital communication bus (52) coupled to one of the interface ports and arranged to provide a communications pathway between the FDR (12) and the external aircraft instrumentation subsystems. A portable maintenance access terminal (70) is coupled to the system via a local area network bus (60).

7 Claims, 3 Drawing figures